

Appl. No. : 10/688,005
Filed : October 16, 2003

REMARKS

The Applicants request entry of the amendments set forth above. Claims 1-24 were pending but subject to a restriction requirement. The Examiner selected claims 1-10 and 20-22 for consideration. As a result, Claims 11-19 and 23-24 are withdrawn from consideration and Claims 1-3, 5-10 and 20-22 are rejected. Claim 4 is objected to, but would be allowable if re-written to include the limitations of the independent claim from which it depends. The Applicants thank the Examiner for the detailed Office Action. The Applicants request reconsideration in view of the following comments.

Claim Objections

The Examiner objected to Claim 1 based on use of the term cascade instead of the term cascade. The Applicants have amended Claim 1 to correct this error.

The Examiner also objected to Claim 20 based on a duplication of the term 'at'. The Applicants submit that the duplicate use of the term 'at' is intentional and meant to mean that an AC ground is maintained at any of the cascade nodes.

Claim Rejection Under 35 U.S.C. § 102

The Examiner rejected Claims 1, 3, 5-9 and 20-22 under 35 U.S.C. 102(e) as being anticipated by Luo. Of these claims, Claims 1, 7 and 20 are independent claims and, as such, the focus of the following discussion is on these claims. Against these independent claims, the Examiner asserts that the Luo reference teaches each and every element. Applicants submit that the teachings of the Luo references, while directed to a current mirror structure, do not teach all the claimed elements. Each of the independent claims is discussed below.

Appl. No. : 10/688,005
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Claim 1

The limitations of Claim 1 require an input, and the rest of the structure is described in relation to this input. By way of example and in reference to Figure 3, the input of Claim 1 comprises element 304. The paths or signals are then defined, in relation to the input 304, as S3 and S4. In the other embodiments of the present applicant, an input is also labeled and identified.

The Examiner asserts that Luo teaches an input at Vcc (actually between Vcc and Ibias, but technically, this is node Vcc). The Applicants submit that the Examiner has technically misinterpreted this aspect of Luo. The alleged input node cited by the Examiner is actually Vcc, the DC voltage source (see column 2, line 24, column 1, line 48, column 3, line 14). Because this node serves as a connection to a voltage source, it does not serve as an input node. Furthermore if this node was used as an input for a time varying signal, the time varying signal would pollute the entire circuit, which is all fed by the power source Vcc. Hence, the Examiners interpretation results in an inoperable circuit.

In further support of this position, the Applicants submit that Figure 1 of the Luo reference clearly *shows the input at the bottom of the Luo Figure*. This interpretation is also supported at column 2, lines 31-32. Hence, the input of the Luo reference is not the node cited by the Examiner, but is at the bottom of the Luo Figure.

The Examiner's entire rejection regarding the similarities between the structure of the Luo reference, as compared to Claim 1, is based on the input being at Vcc node. As a result of this misinterpretation of the Luo reference by the Examiner, the Examiner's comparison of Claim 1 to the Luo references is likewise in error. For example, the Examiner uses the inaccurate input location to define the first current mirror path and the second current mirror path and thus, the Luo references does not teach such first and second current mirror paths as asserted by the Examiner. Consequently, the Applicants request that the rejection of Claim 1 be withdraw.

In addition, the last element of Claim 1 requires a *'device' configured to modify the transfer function of the first path or the second path to increase bandwidth of the current mirror by maintaining an AC ground at the cascade node*. For example, in Figure 3, this 'device' may

Appl. No. : 10/688,005
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comprise element 332 while in Figure 4 this 'device' comprises elements 404, 408. The Examiner asserts that Luo teaches that elements C1 and R1 are such a device.

The Applicants submit that this is technically incorrect. The Luo reference does not teach that capacitor C1 and resistor R1 establish an AC ground or increase bandwidth. Instead, the Luo reference teaches that the *capacitor C1 is simply part of the matching network for the input and is a blocking capacitor*. (See column 2, lines 34-36). Thus, instead of increasing bandwidth, the *capacitor C1 actually decreases the bandwidth* by blocking certain frequencies. (See column 2, lines 34-36). Furthermore, the Luo reference never expressly discusses or teaches increasing bandwidth of the current mirror or maintaining an AC ground.

Moreover, not only does the Luo reference not expressly teach such a structure or function, the circuit shown does not *inherently* have such structure or function. The capacitor C1 in Luo is in series with the input and hence *serves as a blocking capacitor*.

The Applicants request allowance of Claim 1 and Claims 2-6 that depend from Claim 1.

Claim 7

The Examiner utilized the same rejection rational for Claim 7 as was used for Claim 1. To avoid repetition, the arguments for Claim 1 are incorporated herein and also apply to Claim 7. In addition, Claim 7 includes the limitation requiring a "device in the first path configured to delay the first signal . . ."

The Examiner does not cite any passage in the Luo reference that teaches or suggests a delay. Furthermore, an electronic text search of the Luo reference reveals that it does not mention the term 'delay' or 'phase'. The Applicants submit that the Luo reference can not anticipate Claim 7 if it does not teach a device configured to delay the first signal.

To the extent the Examiner does cite such a device, it is a *capacitor C1, which only serves as a blocking capacitor and for input matching* (see column 2, lines 34-36) and *does not serve as or function as a delay*.

The Applicants submit that Claim 7 is allowable over the prior art and as such request allowance of Claim 7 and dependent Claims 8-10, which depend from Claim 7.

Appl. No. : 10/688,005
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Claim 20

The Examiner utilized the same rejection rational for Claim 20 as was used for Claim 1. To avoid repetition, the arguments for Claim 1 are incorporated herein and also apply to Claim 20.

In making the rejection, the Examiner asserts that one signal path runs from the Vcc node through Q4, through Q2, to the node between Q2 and Q1. The Examiner asserts that another signal path runs from Vcc node through Q4, through Q3, through Q1 to the node between Q2 and Q1. The Examiner also asserts that the Luo reference teaches the input at the Vcc node.

Claim 20 requires that a 'delay be connected in at least one of the two or more signal paths, . . .'. In addition to the arguments presented for Claim 1 and Claim 7, the Applicants submit that Luo does not teach a delay. In the event the Examiner asserts the delay is taught by capacitor C1, the Applicants respectfully disagree. *First*, the capacitor C1 does not function as a delay. (see column 2, lines 34-36). *Second*, the capacitor C1 is not in the first path or the second path as defined by the Examiner when describing the first path and the second path of the Luo reference. Hence, even if the capacitor C1 is alleged to be a delay, the capacitor C1 is not located in the first or second path as required by Claim 20. *Third*, the method of Claim 20 is directed to a 'method for improving the high frequency operation of an amplifier.' The Luo reference is not directed to increasing amplifier bandwidth. The Luo reference is directed to a self-biasing amplifier circuit. (see column 1, lines 38-41).

As a result of these differences, the Applicants submit that Claim 20 is allowable over the prior art. Claims 21 and 22, which depend from Claim 20, are likewise allowable. A notice of allowance for these claims is requested.

Claims 2 and 10

The Examiner also rejected Claims 2 and 10 under 35 U.S.C. § 103 as being obvious in view of Luo.

Claim 2 depends from Claim 1, which for the reasons cited above, is submitted as allowable. Claim 2 simply defines the type of semiconductor devices as FETs. Because the

Appl. No. : 10/688,005
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Claim 1 is not anticipated or made obvious by the Luo reference, the Applicants submit that Claim 2 is not obvious. Luo does not anticipate or make Claim 1 obvious because Luo does not teach all of the elements of Claim 1. Support for this statement is set for above.

Claim 10 depends from Claim 7, which for the reasons cited above, is submitted as allowable. Claim 10 requires that the input signal is greater than 300 MHz. Because the Claim 7 is not anticipated or made obvious by the Luo reference, the Applicants submit that Claim 10 is not obvious. Luo does not anticipate or make Claim 7 obvious because Luo does not teach all of the elements of Claim 7. Support for this statement is set for above.

SUMMARY

Applicants assert that Claims 1-10 and 20-22 are in a condition for allowance and respectfully requests a notice as to the same. If any matters remain outstanding, the Examiner is invited to contact the undersigned by telephone.

Dated: _____

8/10/05

Respectfully submitted,

By: _____

C. Miller
Chad W. Miller
Registration No. 44,943
Weide & Miller, Ltd.
Bank West Building, 5th Floor
7251 West Lake Mead Blvd., Suite 530
Las Vegas, NV 89128
(702)-382-4804 (Pacific time)